

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: YOUNG, Andrew A.
GEDULIN, Bronislava
BEELEY, Nigel Robert Arnold
PRICKETT, Kathryn S.
- (ii) TITLE OF INVENTION: METHODS FOR REGULATING
GASTROINTESTINAL MOTILITY
- (iii) NUMBER OF SEQUENCES: 37
- (iv) CORRESPONDENCE ADDRESS:
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 - (B) STREET: 633 WEST FIFTH STREET
 - (C) CITY: LOS ANGELES
 - (D) STATE: CALIFORNIA
 - (E) COUNTRY: USA
 - (F) ZIP: 90017
- (v) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- (vi) CURRENT APPLICATION DATA:
 - (A) APPLICATION NUMBER: 08/908,867
 - (B) FILING DATE: 08-AUGUST-1997
 - (C) CLASSIFICATION: Pending
- (vii) PRIOR APPLICATION DATA:
 - (A) APPLICATION NUMBER: 08/694,954
 - (B) FILING DATE: 08-AUGUST-1996
 - (C) CLASSIFICATION: Pending
- (viii) ATTORNEY/AGENT INFORMATION:
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 - (C) REFERENCE/DOCKET NUMBER: 227/166
- (ix) TELECOMMUNICATION INFORMATION:
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 - (B) TELEFAX: 213/955-0440
 - (C) TELEX: 67-3510

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 39 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ix) FEATURE:

(D) OTHER INFORMATION: amidated Ser (Serineamide)

[illegible]

(i) SEQUENCE CHARACTERISTICS:

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ix) FEATURE:

(D) OTHER INFORMATION: amidated Ser (Serineamide)

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30
Ser Gly Ala Pro Pro Pro Ser
35

(i) SEQUENCE CHARACTERISTICS:

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ix) FEATURE:

(D) OTHER INFORMATION: amidated Arg (Arginineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 1 5 10 15
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
 20 25 30

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 31
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Asp Leu Ser Lys Gly Met Glu Glu Glu Ala Val Arg Leu Phe Ile Glu
 1 5 10 15
 Trp Leu Lys Asn Gly Gly Pro Ser Ser Gly Ala Pro Pro Pro Ser
 20 25 30

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
 1 5 10 15
 Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
 20 25 30
 Ser Gly Ala Pro Pro Pro Ser
 35

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

His	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20					25					30		
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ix) FEATURE:

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

His	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Phe	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20					25					30		
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Tyr Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30
Ser Gly Ala Pro Pro Pro Ser
35

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Tyr (Tyrosinamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30
Ser Gly Ala Pro Pro Pro Tyr
35

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

His Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30
Ser Gly Ala Pro Pro Pro Ser

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(B) LOCATION: 6

(D) OTHER INFORMATION: naphthylalanine

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

His	Gly	Glu	Gly	Thr	Ala	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20					25					30		
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

His	Gly	Glu	Gly	Thr	Phe	Ser	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20					25					30		
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

His	Gly	Glu	Gly	Thr	Phe	Ser	Thr	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5				10						15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20				25					30			
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

His	Gly	Glu	Gly	Thr	Phe	Thr	Thr	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5				10						15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20				25					30			
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

His Gly Glu Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
 20 25 30
Ser Gly Ala Pro Pro Pro Ser
 35

(2) INFORMATION FOR SEQ ID NO:16:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

- (ix) FEATURE:
(B) LOCATION: 10
(D) OTHER INFORMATION: pentylglycine

- (B) LOCATION: 39
(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

His Gly Glu Gly Thr Phe Thr Ser Asp Gly Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Met Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
 20 25 30
Ser Gly Ala Pro Pro Pro Ser
 35

(2) INFORMATION FOR SEQ ID NO:17:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

- (ix) FEATURE:
(B) LOCATION: 10
(D) OTHER INFORMATION: pentylglycine

- (B) LOCATION: 39
(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Ser Gly Ala Pro Pro Pro Ser
35

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 22
- (D) OTHER INFORMATION: naphthylalanine

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Ala Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
 20 25 30
Ser Gly Ala Pro Pro Pro Ser
 35

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Val Glu Trp Leu Lys Asn Gly Gly Pro Ser
 20 25 30
Ser Gly Ala Pro Pro Pro Ser
 35

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

His	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Leu	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Val	Glu	Phe	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20					25					30		
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 23
- (D) OTHER INFORMATION: tertiary-butylglycine
- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

His	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Gly	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20					25					30		
Ser	Gly	Ala	Pro	Pro	Pro	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(B) LOCATION: 23

(D) OTHER INFORMATION: tertiary-butylglycine

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

```
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1           5           10           15
Glu Ala Val Arg Leu Phe Gly Glu Phe Leu Lys Asn Gly Gly Pro Ser
          20           25           30
Ser Gly Ala Pro Pro Pro Ser
          35
```

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

```
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1           5           10           15
Glu Ala Val Arg Leu Phe Ile Asp Trp Leu Lys Asn Gly Gly Pro Ser
          20           25           30
Ser Gly Ala Pro Pro Pro Ser
          35
```

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 39 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

[illegible]

(2) INFORMATION FOR SEQ ID NO:27

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 31, 36, 37, 38
(D) OTHER INFORMATION: thioproline
- (B) LOCATION: 39
(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
 20 25 30
Ser Gly Ala Pro Pro Pro Ser
 35

(2) INFORMATION FOR SEQ ID NO:28

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 36, 37, 38
(D) OTHER INFORMATION: thioproline
- (B) LOCATION: 39
(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

[illegible]

(2) INFORMATION FOR SEO ID NO:29

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 31, 36, 37, 38
(D) OTHER INFORMATION: homoproline

- (B) LOCATION: 39
(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

[illegible]

(2) INFORMATION FOR SEQ ID NO:30

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 36, 37, 38
(D) OTHER INFORMATION: homoproline

- (B) LOCATION: 39
(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser

20
Ser Gly Ala Pro Pro Pro Ser
35

(2) INFORMATION FOR SEQ ID NO:31

```

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1      5      10      15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
      20      25      30
Ser Gly Ala Pro Pro Pro Ser
      35

```

[illegible]

(2) INFORMATION FOR SEQ ID NO:33

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 31, 36, 37, 38
- (D) OTHER INFORMATION: N-methylalanine
- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

His	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Ala	Ser
			20					25					30		
Ser	Gly	Ala	Ala	Ala	Ala	Ser									
			35												

(2) INFORMATION FOR SEQ ID NO:34

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 36, 37, 38
- (D) OTHER INFORMATION: N-methylalanine
- (B) LOCATION: 39
- (D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

His	Gly	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Leu	Ser	Lys	Gln	Met	Glu	Glu
1				5					10					15	
Glu	Ala	Val	Arg	Leu	Phe	Ile	Glu	Trp	Leu	Lys	Asn	Gly	Gly	Pro	Ser
			20					25					30		
Ser	Gly	Ala	Ala	Ala	Ala	Ala	Ser								
			35												

(2) INFORMATION FOR SEQ ID NO:35

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (B) LOCATION: 31, 36, 37, 38
- (D) OTHER INFORMATION: N-methylalanine

(B) LOCATION: 39

(D) OTHER INFORMATION: amidated Ser (Serineamide)

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Ala Ser
 20 25 30
Ser Gly Ala Ala Ala Ala Ser
 35

(2) INFORMATION FOR SEQ ID NO:36

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 39 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1 5 10 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
 20 25 30
Ser Gly Ala Pro Pro Pro Ser
 35

(2) INFORMATION FOR SEQ ID NO:37

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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